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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,080	09/21/2005	Norbert Erhard	028972.56011US	1839

23911 7590 03/07/2006  
CROWELL & MORING LLP  
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EXAMINER

LIN, ING HOUR

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/529,080	ERHARD ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ing-Hour Lin	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 5 is objected to because of the following informalities: In claim 5, lines 3-4, "the melt" after "furnace" should be deleted. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Mercer, II et al in view of Sandell et al and further in view of Meyer.

Mercer, II et al (col. 6, lines 11+) teach the claimed shielding (protecting) gas device for pressure die-casting machine, comprising a container (tank 13) served as a pressure accumulator

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and containing a shielding gas mixture of  $\text{SF}_6$  and air provided with a valve 13a, a supply line 13b, a metering device (flowmeter 15) and device for supplying and adjusting gas supply rate and concentration of the protective gas into furnace or holding or melting pot 10 through the use of inlet nozzle (conduit 15a) for the purpose of preventing the melt from oxidation even during periodic opening of the access door to the melting pot.

Mercer, II et al fail to teach the use of a plurality of inlet nozzles and the use of a metering device including pressure controller.

However, Sandell et al (col. 3, lines 18+) teach the use of a plurality of inlet nozzles used to atomize mixture of gas and prevent solid (wetted and solidified melt) build-up for the purpose of effectively atomizing gas mixture downstream from the inlet nozzle. Meyer (col. 5, lines 31+) teaches the use of multiple pressure controllers 40 between the gas pressurization sources 38 and gas inlet openings 36 and the pressure controllers are connected to PC/PLC 70 (programmable computer or programmable logic controller) (see Fig. 3) for the purpose of effectively regulating a predetermined gas pressure in the casting system. It would have been obvious to one having ordinary skill in the art to provide Mercer, II et al the use of a plurality of inlet nozzles and pressure controller as taught by Sandell et al and Meyer in order to effectively introduce uniform gas mixture into the furnace at a predetermined operating gas pressure.

Regarding to claim 4, Mercer, II et al in view of Sandell et al and further in view of Meyer fails to teach the arrangement of inlet nozzles. However, the use of the arrangement of inlet nozzles placed on the furnace would have been obvious to one having ordinary skill in the art in order to flow of the mixed gases toward leakage points guided by gas pressure gradient between the arrangement of inlet nozzles and the leakage points.

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5. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Mercer, II et al in view of Sandell et al and further in view of Meyer and Roberts et al.

Mercer, II et al in view of Sandell et al and further in view of Meyer fails to teach the use of a mixing device.

However, Roberts et al (col. 2, lines 39+) teach the use of a mixing device including a mixing chamber (mixer tank 65) fed by two gases sources 52, 54 and having pressure regulating devices (regulators 56) on each feed line and located between each gas source and the mixing chamber (mixer tank) and monitored by a controller 70 for the purpose of effectively providing uniform gas mixture. It would have been obvious to one having ordinary skill in the art to provide Mercer, II et al in view of Sandell et al and further in view of Meyer the use of a mixing device placed upstream of the container (tank 13) as taught by Roberts et al in order to effectively providing uniform gas mixture to the inlet nozzles.

Regarding to claims 13 and 15-16, Mercer, II et al in view of Sandell et al and further in view of Meyer and Roberts et al fails to teach pressure nozzles. However, the use of pressure nozzles such as the type of spray nozzles taught by Sandell et al for the purpose of pressurizing and mixing the supplied gases into the mixing chamber would have been obvious to one having ordinary skill in the art in order to enhance uniformity of the mixed gases in the mixing chamber and reduce cycle time.

6. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Mercer, II et al in view of Sandell et al and further in view of Meyer and Benning et al.

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Mercer, II et al in view of Sandell et al and further in view of Meyer and Roberts et al fails to teach the use of a gas analyzer.

However, Benning et al (col. 2, lines 53+) teach the use of a gas analyzer (gas analyzer assembly 14) for the purpose of effectively detecting the concentration and uniformity of gas mixture. It would have been obvious to one having ordinary skill in the art to provide Mercer, II et al in view of Sandell et al and further in view of Meyer the use of a gas analyzer as taught by Benning et al in order to detect the concentration and uniformity of gas mixture in the mixing chamber.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*I.H.L.*  
I.-H. Lin

3-3-06

KEVIN KERNS *Kevin Kerns 3/6/06*  
PRIMARY EXAMINER